North Carolina Department of Transportation
Division of Highways
Traffic Engineering and Safety Systems Branch

Standard Practice
For
Work Zone Speed Limit Reduction Guideline For NC Highway Construction and Maintenance Activities

Purpose: This guideline provides guidance and uniformity on the establishment of interim speed limit reductions for highway work zones.

Objective: The objective of this guideline is to identify the appropriate speed limit reduction for work being performed on full control of access facilities in maintenance and construction work zones.

Guideline: The Work Zone Traffic Control Unit in consultation with the Traffic Engineering Branch has developed the guideline below to help coordinate and to implement "best strategies" to address work zone speed limits for construction and maintenance activities. In accordance with the provisions described in Chapters 6B,C and D of the MUTCD, this guideline has been crafted to ensure thorough engineering study prior to implementation of interim speed limit reductions.

Speed limit reductions can be made in the interest of safety for the motoring public due to active project conditions, or they can be made if the reduction is intended for the safety of the construction worker. Before a speed limit reduction is implemented, an analysis is to be made by the traffic control plan designer to determine if a speed limit reduction strategy is the best solution.

This guideline has been developed to address the need and application for "Work Zone" speed limit reductions, which focus on the 'static' type of construction zones. These projects generally contain restrictive features throughout their entire length, which may require added decision making, increased reaction times, and other driver focused actions where slower speeds can allow for better driver recognition and reaction. Below are the definition, application and criteria for "Work Zone" Speed Limit reductions. However, this guideline can not cover every situation that may be encountered in construction work zones, therefore, appropriate judgement must be used in applying the guidelines. Exceptions to the required criteria below will be considered on a case by case basis.

Work Zone Speed Limits (See Attached Drawings)

A **"Work Zone" Speed Limit** is one that reduces the existing speed limit with standard stationary mounted speed limit signing and enacted ordinances for full control of access facilities.

These speed limits are intended for continuous posting with regulatory signs on projects with long duration work (greater than 30 days). Also, these speed limits should be used where it is imperative for the motorists to reduce speeds in order to safely navigate through lane restrictions and other potential hazards encountered in the construction zone. These speed limits should only be posted when and where the roadway construction environment continuously dictates the need for a reduced speed. The factors that led to the need to establish a lower speed limit should also be present 24 hours a day.

After the State Traffic Engineer signs the ordinance, the "Work Zone" speed limit signs will be installed on the project according to the drawings. In addition, if a project warrants a "Work Zone" Speed Limit reduction, it automatically qualifies for the $250 speeding penalty. This additional speed fine is also to be ordinanced by the State Traffic Engineer.

After the restrictive feature or features necessitating the "Work Zone" speed limit are mitigated, the State Traffic is to be notified to rescind the ordinance, the work zone speed limit signs are to be removed, and the existing speed limit restored. In addition, the State Traffic Engineer will also rescind the $250 speeding penalty ordinance and the $250 speeding penalty signing will be simultaneously removed.

Typical speed limit reductions are 10 MPH below the existing posted speed limit. In 70 MPH speed zones, a maximum 15 MPH speed reduction may be used. It is strongly recommended that no speed limits below 55 MPH be posted on fully controlled access facilities. The Regional Traffic Engineer, after consulting with the Division, will determine the speed limit with the final approval being made by the State Traffic Engineer.

When a "Work Zone" Speed Limit merits a 10-MPH speed reduction from the preceding zone, the speed reduction sign W3-5 shall be used at the locations as shown on the attached drawings.

When a "Work Zone" Speed Limit merits a 15-MPH speed reduction from the preceding zone, the speed reduction signs W3-5 and W3-5A shall be used at the locations as shown on the attached drawings. The concluding sign should be a regulatory, Speed Limit sign with the in-place speed limit for the roadway ahead. This is to inform the drivers that the "Work Zone" speed limit has ended. See Attached Drawings for all sign placement.

The guideline below address the criteria required for a "Work Zone Speed Limit".

Work Zone Speed Limits - Criteria for Implementation

These speed limits are intended for continuous posting with regulatory signs on projects with long duration work (greater than 30 days) where it is imperative for the motorists to reduce speeds in order to safely navigate through lane restrictions and other potential hazards encountered in the construction zone.

Only the specific portion of the work zone where conditions warrant or restrictive features are present shall receive consideration for the speed reduction. In addition, only certain phases of construction may warrant this reduction.

The work zone must meet ALL of the following criteria to be considered for the "Work Zone Speed Limit" Reduction ordinance:

1. **Work zone is of longer duration (Greater than 30 days) where there are continuous hazards to the motorists. Some of these include long-term median cross-overs, continuous lane closures, on-site detours, narrowed lanes, non-usable shoulders, sharp roadway curvature, etc.**

2. **Existing Speed Limit is 65 MPH or greater**

3. **Speed reduction applies to an area 1/2 mile in length or greater.**

AND

The work zone shall meet **at least one** of the following criteria to be further considered for the **Work Zone Speed Limit** Reduction ordinance:

1. Portable concrete barrier and/or guardrail or guiderail are **used on both inside and outside** shoulders on a 4 lane, divided facility (2 lanes per direction) for a distance ½ mile or greater with the following parameters:

   a) 12' Travel lanes and shy distances 2' or less to the face of the barrier or rail

   b) 11' Travel lanes and shy distances 3' or less to the face of the barrier or rail

2. Portable concrete barrier or guardrail or guiderail used on **either shoulder** on a Megamulti-lane facility (3 or more lanes per direction) for a distance of 1 mile or greater with the following parameters:

   a) 12' Travel lanes and shy distances less than 2' to the face of the barrier or rail

   b) 11' travel lanes and shy distances less than 3' to the face of the barrier or rail

3) Continuous Lane Closures (in use 24 hours/day for a period longer than 30 days) where traffic queuing is expected to be at least ½ mile or more

4) Long-term median cross-overs (continuously in use longer than 30 days) where the design speed is lower than the existing posted speed limit

5) On-site detours (continuously in use longer than 30 days) where the design speed is lower than the existing posted speed limit.

6) Narrow lanes: Lane widths less than 11' for a distance that exceeds 2000'

7) Work zone includes a minimum of one interchange per mile of length.

As stated above, this guideline can not address every situation that may be encountered in an individual project or a series of projects along a corridor. There are many factors that can come into play that are not covered in this guideline, and for that reason, exceptions can be made on a case by case basis which may justify the use of a "Work Zone" speed limit reduction. Some of the situations below may arise from time to time and can be used for consideration.

- Nearby projects ordinanced for "Work Zone" speed limit reductions impacting adjacent projects - If the impacts warrant the reduction as determined by the Traffic Control Designer and the Regional Traffic Engineer, this may initiate a "Work Zone" speed limit reduction for the adjacent project. These will be considered on a case by case basis.

- Poor Site Conditions- If site conditions are such that safe navigation requires consideration of a speed limit reduction, then these can be made on a case by case basis. Examples may include an old concrete pavement experiencing structural failure with construction joints and pavement marking alignment conflicts. Another may be poor roadway geometry or sight distance due to grade or alignment changes, etc.

- Accident Rates for the facility (prior to construction) are higher than the statewide critical accident rate for other similar facilities.

- Current Truck Traffic levels greater than 15% of the AADT in the work zone